

**Appn No. 09/501,199**  
**Amdt date September 5, 2003**  
**Reply to Office action of May 7, 2003**

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) An article comprising a tunable filter, the tunable filter comprising:  
an optical cavity having a length that is defined by first and second spaced mirrors and determinative of a center transmission wavelength of a passband of said tunable filter;  
a tuning device operative to change said length of said optical cavity; and  
a filter-disabling means operative to disrupt a finesse of said optical cavity,  
wherein  
said first mirror is movable and bifurcated into an upper layer and a lower layer spaced from one another to define an auxiliary gap therebetween.
2. (Original) The article of claim 1 further comprising:  
a first filter input for receiving a multiplexed optical signal having a plurality of spectral channels and delivering it to said optical cavity;  
a first filter output for receiving at least one of said spectral channels from said optical cavity, wherein said received spectral channel is within said passband of said tunable filter.
3. (Original) The article of claim 2, further comprising:  
a first waveguide in optical communication with said first filter input; and  
a second waveguide in optical communication with said first filter output.
4. (Original) The article of claim 3 further comprising:

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4. (Original) The article of claim 3 further comprising:  
a plurality of transmitters for generating a plurality of optical signals;  
a multiplexer for multiplexing said optical signals into said multiplexed optical signal, said optical signals defining said spectral channels thereof;  
a node comprising said tunable filter and a subscriber terminal, wherein said subscriber terminal is in optical communication with said second waveguide and is operable to receive said spectral channel therefrom; and  
an optical fiber for transmitting said multiplexed optical signal to said node, wherein said first waveguide is in optical communication with said optical fiber via said node.
5. (Cancelled)
6. (Currently Amended) The article of claim [5] 1, wherein said ~~first mirror is movable, and further wherein said~~ tuning device comprises said first mirror.
7. (Original) The article of claim 6 wherein said filter-disabling device comprises said first mirror.
8. (Original) The article of claim 7 wherein said first mirror is operative to tilt.
9. (Original) The article of claim 8 wherein said first mirror comprises:  
a layer suspended over a substrate;  
a dielectric mirror disposed on said layer; and  
two individually-addressable electrically-conductive electrodes.
10. (Currently Amended) The article of claim 7 wherein ~~said first mirror is bifurcated into an upper layer and a lower layer, wherein:~~  
~~said upper layer and said lower layer are spaced from one another defining an auxiliary gap; and]~~  
said upper layer and said lower layer are movable.

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11. (Original) The article of claim 10 wherein:  
said upper layer and said lower layer each comprise at least one layer of material; and  
said one layer of material has a thickness that is an odd-multiple of an eighth of an operating wavelength of said tunable filter.
12. (Original) The article of claim 6 wherein said filter-disabling device comprises electrically-switched media selected from the group consisting of absorbing media, scattering media and depolarizing media.
13. (Original) The article of claim 12, wherein said electrically-switched absorbing media is a quantum well modulator.
14. (Original) The article of claim 1 wherein:  
said optical cavity comprises a ring resonator;  
said tuning device comprises an adjustable delay device operative to change a length of said optical cavity; and  
said filter-disabling device is an adjustable loss device characterized by a transmissibility that varies with applied current.
15. (Original) The article of claim 14 wherein:  
said filter-disabling device comprises a semiconductor optical amplifier that is disposed in said ring resonator.
16. (Currently Amended) A method comprising:  
disrupting finesse of a tunable filter having two spaced mirrors defining an optical cavity, one of said mirrors moveable and bifurcated so that a gap is defined within the bifurcated mirror;  
tuning said tunable filter to a desired center transmission wavelength; and  
recovering said finesse of said tunable filter.

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17. (Currently Amended) The method of claim 16 wherein said [filter has] two spaced mirrors are in parallel relation to one another, [~~said two mirrors defining an optical cavity, wherein:~~

~~the]~~ and said step of tuning comprises changing a length of said optical cavity.

18. (Original) The method of claim 17 wherein said step of tuning further comprises moving at least one of said two mirrors to change said length of said optical cavity.

19. (Original) The method of claim 17 wherein the step of disrupting finesse comprises tilting one of said two mirrors so that said two mirrors are not in parallel relation to one another.

20. (Amended) The method of claim 17 wherein:

~~[one of said mirrors is bifurcated so that a gap is defined within the bifurcated mirror;]~~

when said filter is not being tuned, said gap has a first size that provides a first finesse suitable for transmitting said center transmission wavelength through said tunable filter;

the step of disrupting finesse comprises changing said first size of said gap to provide a second finesse that is unsuitable for transmitting said center transmission wavelength through said tunable filter.

21. (Original) The method of claim 17 wherein:

an electrically-switched media selected from the group consisting of absorbing media, scattering media and depolarizing media is disposed in said optical cavity;

when said filter is not being tuned, said electrically-switched media is transmissible at operating wavelengths of said filter;

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said step of disrupting finesse comprises electrically switching said electrically-switched media so that it is non-transmissible at said operating wavelengths of said filter.

22. (Original) The method of claim 16 wherein:

said filter comprises a ring resonator having an in-line semiconductor optical amplifier;

when said filter is not being tuned, said semiconductor optical amplifier is transmissible at operating wavelengths of said filter;

said step of tuning comprises changing an effective length of said ring resonator; and

said step of disrupting finesse comprises changing operation of said semiconductor optical amplifier so that it is non-transmissible at operating wavelengths of said filter.

23. (New) An article comprising a tunable filter, said tunable filter comprising:

an optical cavity having a length that is defined by first and second spaced mirrors and determinative of a center transmission wavelength of a passband of said tunable filter, said first mirror bifurcated into a movable upper layer and a movable lower layer that are spaced from one another defining an auxiliary gap;

a tuning device operative to change said length of said optical cavity; and  
a filter-disabling means operative to disrupt a finesse of said optical cavity, wherein each of said tuning device and said filter-disabling device comprise said first mirror.

24. (New) The article of claim 23 wherein:

said upper layer and said lower layer each comprise at least one layer of material; and

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said one layer of material has a thickness that is an odd-multiple of an eighth of an operating wavelength of said tunable filter.

25. (New) A method comprising:

disrupting finesse of a tunable filter, said filter having two spaced mirrors in parallel relation to one another, said two mirrors defining an optical cavity, one of said mirrors bifurcated so that a gap is defined within the bifurcated mirror;

tuning said tunable filter to a desired center transmission wavelength by changing a length of said optical cavity;

recovering said finesse of said tunable filter, wherein,

when said filter is not being tuned, said gap has a first size that provides a first finesse suitable for transmitting said center transmission wavelength through said tunable filter;

the step of disrupting finesse comprises changing said first size of said gap to provide a second finesse that is unsuitable for transmitting said center transmission wavelength through said tunable filter.